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**DETAILED ACTION**

***Response to Amendment***

1. Claims 1-2, 4-11, 13, 15, 17-19, 22, 28, 30-31, 34-37, 81-82, 93-97 are currently pending and under examination.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-2, 4-11, 13, 15, 17-19, 22, 28, 30-31, 34-37, 81-82, 93-97 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 1 and 81 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the steps that detail how fluids are applied to a reaction site, when they are located in a sealed vessel. More specifically, if the vessel is sealed, it is unclear how the fluids would be capable of leaving the vessel.
5. The remaining claims are indefinite due to their dependence on an indefinite claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 81 is rejected under 35 U.S.C. 102(b) as being anticipated by Miethe et al. [US 6,488,894].

With respect to claim 81, Miethe et al. teach a reaction site comprising a reaction chamber, and a first and second fluid reagents statically stored in a segregated reagent column (column 2, lines 44-55), which is a common sealed vessel comprising movable partitions that are slidably supported in a sealing manner at the inner surface of the container (column 2, lines 35-45). The two liquids may then be discharged in a simple, precise, chronologically defined and sequential manner into the reaction chamber without prior mixing of the reagents and wherein the reaction chamber and the reagent column may be part of a common platform (column 2, lines 30-37, fig. 1, column 35-45, claims 1-3).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miethe et al. [US 6,488,894].

With respect to claim 82, Miethe et al. teach that the first and second fluids are statically maintained in the segregated reagent column, but do not teach that they are maintained for

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greater than one day. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, since the segregated reagent column is designed for statically maintaining fluids separately for storage (abstract), one of ordinary skill in the art at the time of the invention would have found it obvious to have statically maintained the fluids separately for greater than one day, for whenever the reagents are actually needed. One of ordinary skill in the art at the time of the invention would further have been motivated to maintain the reagents statically for more than a day, due to the flexibility and efficacy in being able to prepare the necessary reagents without the risk of mixing or flowing out.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

11. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

12. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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13. Claims 1, 2, 7, 8, 11, 13, 35-37, 81-94 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 45-46, 48, 51-53, 72-102 of copending Application No. 10/584,819. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application recite a method comprising flowing in series in the microfluidic channel a predetermined sequence of fluid plugs comprising a first and second fluids separated by a third immiscible fluid to a reaction site such as a binding region, and accumulating an opaque material, wherein the fluids are stored in a sealed vessel for over a month (claim 45, 96-98). Therefore, the conflicting claims encompass a narrower embodiment that would render the instant claims obvious.

The claims further recite that the fluids may be introduced by applying a vacuum (claim 99) and the fluids comprise metal precursors that are electrolessly deposited and light absorbance is detected (claims 46, 48, 74, 79-82).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

14. Applicant's arguments with respect to claims 1-2, 4-11, 13, 15, 17-19, 22, 28, 30-31, 34-37, 81-82, 93-97 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

15. No claims are allowed.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571)272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571)272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson Yang/  
Primary Examiner, Art Unit 1641